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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,665	11/09/2000	Dai Gil Lee	89799.167400	4795

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EXAMINER

PEREZ, GUILLERMO

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/710,665

Applicant(s)

LEE ET AL.

Examiner

Guillermo Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-4 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the process will necessarily would result in the product of claims 1-4, and that the product in claims 1-4 can not be made by a process different from claims 1-5. This is not found persuasive because the rotor can be made by molding the conductor bars and end rings into an integral piece; then forming the composite core in a mold; then mounting the molded bars and rings on the composite core.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 5-6 drawn to an invention nonelected with traverse in Paper No. 7. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2, and 4 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Applicants' admitted Prior Art (APA) in view of Ward et al. (U. S. Pat. 5,211,896).

APA discloses (in figure 3a) a composite squirrel cage rotor (20), comprising:

a rotating shaft (21);

a polymer resin body (22) containing powder of high magnetic permeability

(according to the background of the invention of the application);

a plurality of squirrel cage conductor bars (23) positioned around and embedded in the outer part of the polymer resin body (22) and formed of material having high electric conductivity;

a plurality of axial slots (24), wherein the axial slots (24) are formed between the cage squirrel conductor bars (23); and

cooling bodies (25) inserted into the axial slots (24) for dissipating heat generated in the composite squirrel cage rotor (20). APA discloses that the cooling bodies are heat pipes. APA discloses that chopped fibers are added to the polymer resin body (22) in order to enhance the mechanical properties such as thermal stability and stiffness of the rotor structures (according to pages 3-4 of the application).

However, APA does not disclose that the powder is uniformly distributed in the polymer resin body.

Ward et al. disclose that the powder of high magnetic permeability is uniformly distributed in the polymer resin part (column 5, lines 33-37). The invention of Ward et al. has the purpose of improving the consistency of the performance of the core in use.

It would have been obvious at the time the invention was made to modify the squirrel cage rotor of APA and provide it with the particle uniformity disclosed by Ward et al. for the purpose of improving the consistency of the performance of the core in use.

2. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Ward et al. as applied to claims 1 and 2 above, and further in view of Blakeley et al. (U. S. Pat. 5,122,704).

APA and Ward et al. disclose a squirrel cage rotor as described on item 1 above. However, neither APA nor Ward et al. disclose an inner core of high magnetic permeability so as to improve the performance of the motor by increasing the magnetic flux density of the rotor.

Blakeley et al. disclose an inner core (60 in figure 2) of high magnetic permeability so as to improve the performance of the motor by increasing the magnetic flux density of the rotor (22). Blakeley et al. disclose that chopped fibers (56) are added to the polymer resin body (44) in order to enhance the mechanical properties such as thermal stability and stiffness of the rotor structures. The invention of Blakeley et al. has the purpose of improving rotor cooling performance and structural rigidity.

It would have been obvious at the time the invention was made to modify the squirrel cage rotor of APA and Ward et al. and provide it with the inner core and fibers

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disclosed by Blakeley et al. for the purpose of improving rotor cooling performance and structural rigidity.

3. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Ward et al. as applied to claim 1 above, and further in view of Brinkman (U. S. Pat. 3,715,610).

APA and Ward et al. disclose a squirrel cage rotor as described on item 1 above. However, neither APA nor Ward et al. disclose that the cooling bodies including isothermal cycling material therein. Neither APA nor Ward et al. disclose that the isothermal cycling materials are an ammonia, methanol and Freon. Neither APA nor Ward et al. disclose that the heat pipes are sealed pipes.

Brinkman discloses that the cooling bodies (12) including isothermal cycling material therein (21). Brinkman discloses that the isothermal cycling materials are an ammonia, methanol and Freon (column 4, lines 46-52). Brinkman discloses that the heat pipes are sealed pipes (figure 3). Brinkman's invention has the purpose of enhancing the cooling capabilities of the rotor without the use of external devices like pumps.

It would have been obvious at the time the invention was made to modify the rotor disclosed by APA and Ward et al. and provide it with the pipes and coolant features disclosed by Brinkman for the purpose of enhancing the cooling capabilities of the rotor without the use of external devices like pumps.

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 7-9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone

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numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez
June 11, 2002


NESTOR RAMIREZ
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